MIL-M-22179(AS)
Amendment-6
15 August 1969
Superseding
Amendment-5
27 November 1968

MILITARY SPECIFICATION

MICROPHONE, DYNAMIC M-96B/A

This amendment forms a part of Military Specification MIL-M-22179(WEP) dated 1 May 1961 and has been approved by the Naval Air Systems Command, Department of the Navy.

By this amendment basic MIL-M-22179(WEP) is changed to MIL-M-22179(AS) and throughout the specification Bureau of Naval Weapons shall be changed to Naval Air Systems Command.

Page 1, Title: Delete "M-96(*)/A" and substitute "M-96B/A"

Make this same change wherever "M-96(*)/A" or "M-96/A" appears in this specification.

Page 1, paragraph 1.2, line 4: Delete "M-95(*)/UR" or "M-95/UR" and substitute "M-95B/UR"

Make this same change wherever "M-95(*)/UR" or "M-95/UR" appears in this specification.

Page 1, paragraph 2.1: Delete "MIL-E-5272 Environmental Testing, Aeronautical and Associated Equipment, General Specification for" and substitute "MIL-T-5422 Testing, Environmental, Aircraft Electronic Equipment"

Page 1, paragraph 2.1: Delete "MIL-C-10392 Cables, Special Purpose, Electrical (Miniature)" and substitute "MIL-C-25622 Cord, Electrical WD-34/U"

Page 1, paragraph 2.1: Add "MIL-STD-781 Reliability Tests, Exponential Distribution"

Page 3, Add "3.3.7.3 Reliability in Mean Time Between Failures - The microphones shall have a minimum of 500 hours of mean (operating) time between failures when tested and accepted under the requirements of 4.9"

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*Page 5, paragraph 3.4.1.3.2.1: Add "and 1A."

*Page 5, paragraph 3.4.1.3.2.2: Delete "(Figure 1), WD-27/U" and "MIL-C-10392" and substitute "(Figure 1 and 1A), WD-34/U" and "MIL-C-25662" respectively.

Page 5, paragraph 3.5.2: Delete and substitute "3.5.2 Sensitivity - The voltage output of the microphone at 1000 cps, with a sound pressure level input of 115 db above 0.0002 dyne per sq. cm, shall fall within the limit 51.5 ± 3 db above 1 microvolt. The voltage output shall be measured across a 5 ohm load, as shown in Figure 4. The sensitivity of the microphone shall not vary more than 3 db after being subjected to any, or all, of the service conditions specified herein except salt spray. At an altitude of 10,000 feet the sensitivity shall not fall below the sensitivity at sea level by more than 3 db."

Page 5, paragraph 3.5.3, line 2: Delete "48.5" and substitute "51.5".

Page 6, paragraph 3.5.10: Delete and substitute "3.5.10 Salt Spray - Immediately after the salt spray test (4.5.6) check the microphone for satisfactory operation."

Page 6, paragraph 3.5.11, paragraph title: Delete and substitute "Temperature Cycling"

Page 7, paragraph 4.2: Delete "10 units" and substitute "20 units"

Page 7, paragraphs 4.2 and 4.3: Delete reference to Bureau of Naval Weapons" and substitute "U.S. Naval Ammunition Depot, Crane, Indiana 47522."

Page 8, TABLE I, under "Inspection or Test": Delete "Temperature Shock" and substitute "Temperature Cycling" and under Life Test delete "4.8" and substitute "4.6"

Page 8, TABLE I: Add

		Qualification Test	Sample Test
"Distortion	4.5.13	x	x
Linearity	4.5.14	x	x
Reliability Tests	4.9	x	x"

Page 11, paragraph 4.5.2: Delete and substitute "4.5.2 Test Calibration Procedure - The condenser microphone shall be mounted as shown in Figure 5 with an air gap of 1/4 inch separating the coupler and the microphone grid. The microphone axis shall coincide with the center line of the

mouth of the sound source. After having determined the electrical input to the sound source required to yield a constant sound pressure level of 115 db re 0.0002 dyne per square centimeter, the condenser microphone shall be removed and the test microphone shall be mounted as shown in Figure 7. The geometric center line of the grid shall coincide with the center line of the mouth of the sound source."

Page 11, paragraph 4.5.3.3: Delete and substitute
"4.5.3.3 Frequency Response - Response measurements shall be made between 300 and 4000 cps, at intervals of 100 cps up to 1000 cps, and at intervals of 250 cps above 1000 cps with the microphone mounted 1/4 inch from the calibrated close sound source as shown in Figure 4. The response shall be recorded in db relative to 1 microvolt.

Page 12, paragraph 4.5.6: Delete and substitute
"4.5.6 Salt Spray - The microphone shall be subjected to the salt spray test in accordance with Specification MIL-T-5422 for a period of 50 hours. The microphone shall be washed in tap water to remove excess salt deposits and then excess moisture removed. Check for satisfactory operation."

Page 12, paragraph 4.5.7: Delete and substitute
"4.5.7 Temperature Cycling - The microphone shall be placed within the chamber and maintained for a period of at least 1 hour or until the microphone performance stabilizes at a temperature of 25° ± 15° C. The chamber temperature shall then be reduced to -55° C and maintained at this condition for at least 1 hour or until the microphone performance stabilizes. The internal temperature of the chamber shall then be increased to 71° C and maintained at this condition for at least 1 hour or until the microphone performance stabilizes. The internal chamber temperature shall then be returned to 25° ± 15° C. The number of cycles shall be 5. The microphone shall then be removed from the chamber and response measurements made after stabilization at room temperature."

Page 12, paragraph 4.5.8: Delete and substitute
"4.5.8 Humidity - The microphone shall be subjected to the humidity test Procedure I of Specification MIL-T-5422."

Page 12, paragraph 4.5.9: Delete and substitute
"4.5.9 Vibration - The microphone shall be subjected to the vibration test of Specification MIL-T-5422."

Page 13: Add
"4.5.13 Distortion - The distortion of the microphone shall be measured for compliance with requirements of 3.5.4 by using a distortion analyzer connected across the 5.0 ohm resistor of Figure 4.

4.5.14 Linearity - The linearity of the microphone shall be measured to determine compliance with requirements of 3.5.5."

Page 14: Add
"4.9 Reliability Assurance Tests - Reliability Assurance Tests shall be conducted using MIL-STD-781. Qualification Phase and Sampling Phase Tests shall be conducted.

4.9.1 Qualification Phase - Prior to the acceptance of equipments under the contract or order, a minimum of three (3) equipments shall be tested as outlined in MIL-STD-781, under the section entitled "Qualification Phase of Production Reliability Tests". The maximum number of equipments to be used shall be those listed in TABLE 5 of MIL-STD-781. For the Qualification Phase Test Level E shall be used. The Accept-Reject Criteria for the test plan II shall be used.

4.9.2 Reliability Sampling Phase Test - Samples of the equipment shall be tested as outlined in MIL-STD-781, under the section entitled "Sampling Phase of Production Reliability Tests." For the Sampling Phase Test Level E shall be used. The Accept-Reject Criteria for Test Plan IV shall be used to determine the length of the tests (until an accept or reject decision is reached).

4.9.2.1 Lot Size for Sampling Phase - The equipments constructed during one month shall be one lot.

4.9.3 Test Details - The test details such as the length of the test cycle, the length of the heat portion of the cycle, the performance characteristics to be measured, special failure criteria, preventive maintenance to be allowed during the test, etc., shall be part of the test procedures to be submitted and approved by the activity responsible for the Qualified Products List prior to the beginning of the Qualification Test Phase of the Reliability Assurance Tests."

Page 15, paragraph 6.2, last sentence: Delete and substitute
"The activity responsible for the Qualified Products List is the U.S. Naval Ammunition Depot, Crane, Indiana 47522, and information pertaining to qualification of products may be obtained from that activity."

Page 16, paragraph 6.5: Delete

Pages 17 and 19, Figures 1 and 3: Delete and substitute the new figures 1, 1A, and 3, of this amendment.

Page 18, Figure 2: Delete "5/32".

Page 20, Figure 4: Delete and substitute the new Figure 4 of this amendment.

Page 21, Figure 5: Delete and substitute the new Figure 5 of this amendment.

Page 24, Figure 8: Delete and substitute the new Figure 8 of this amendment.

An asterisk preceding a page number denotes a change to the specification which did not appear in Amendment-5.

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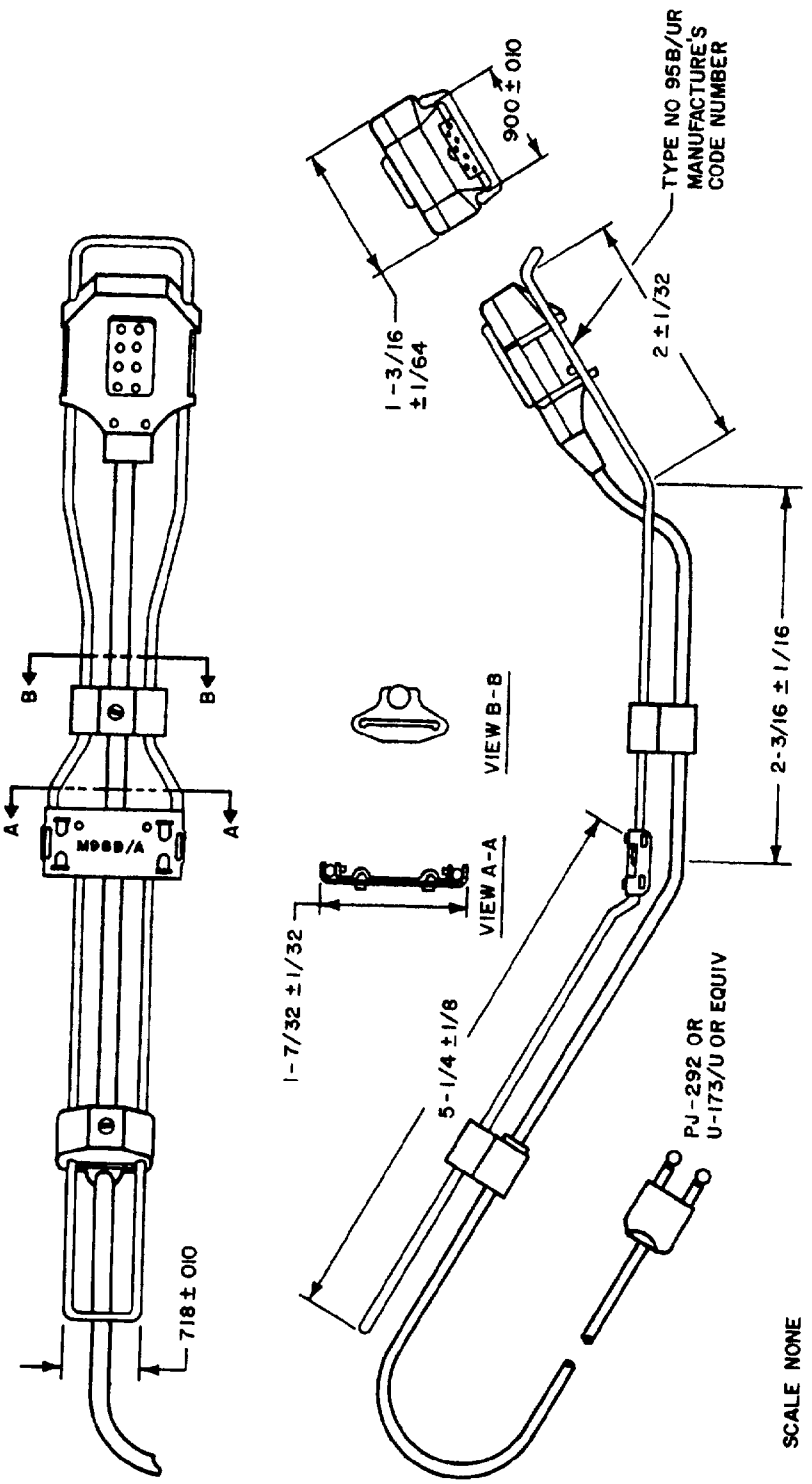


Figure 1. Outline Dimensions and Markings of Microphone and Boom M96B/A

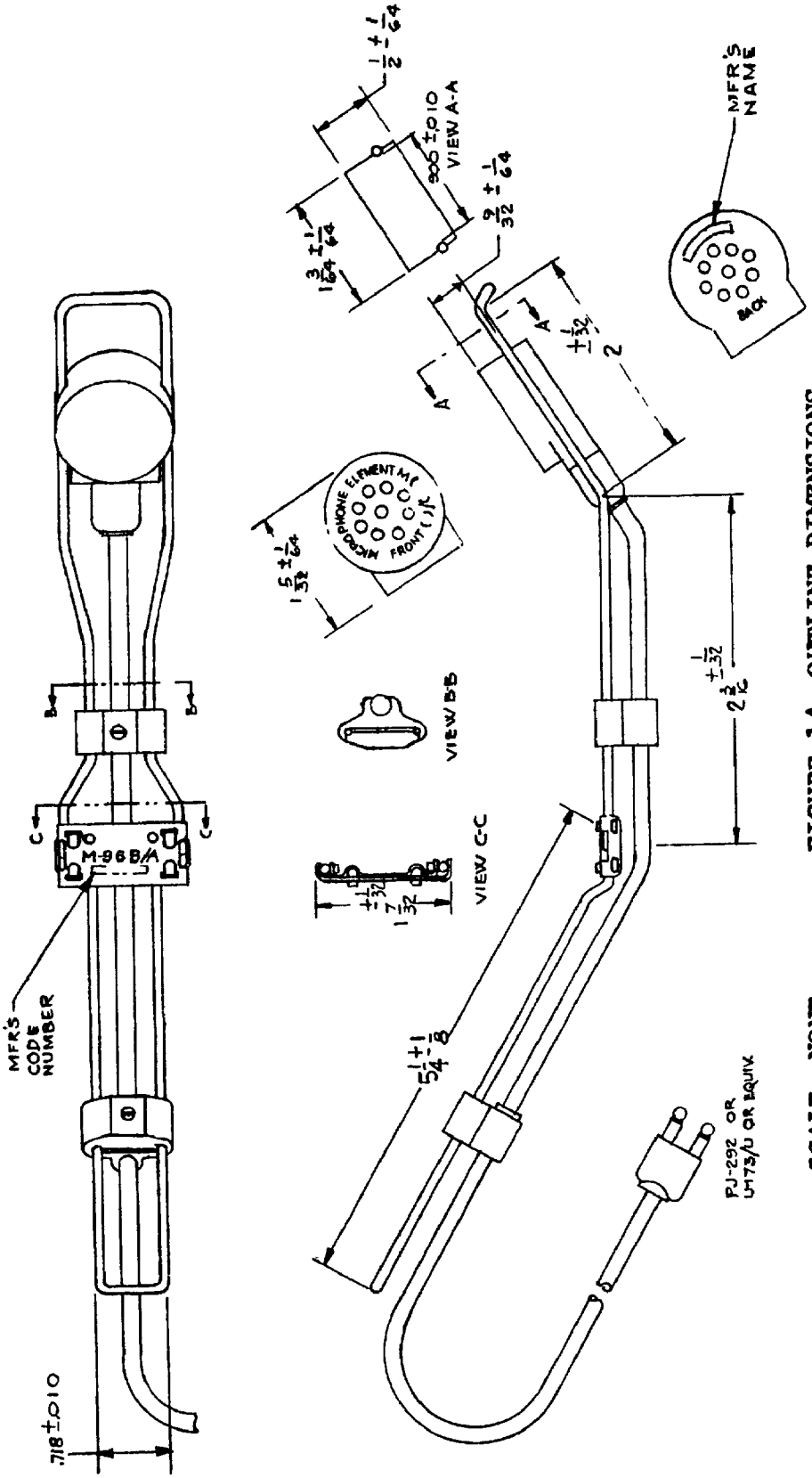


FIGURE 1A OUTLINE DIMENSIONS AND MARKINGS OF MICROPHONE AND BOOM M96B/A

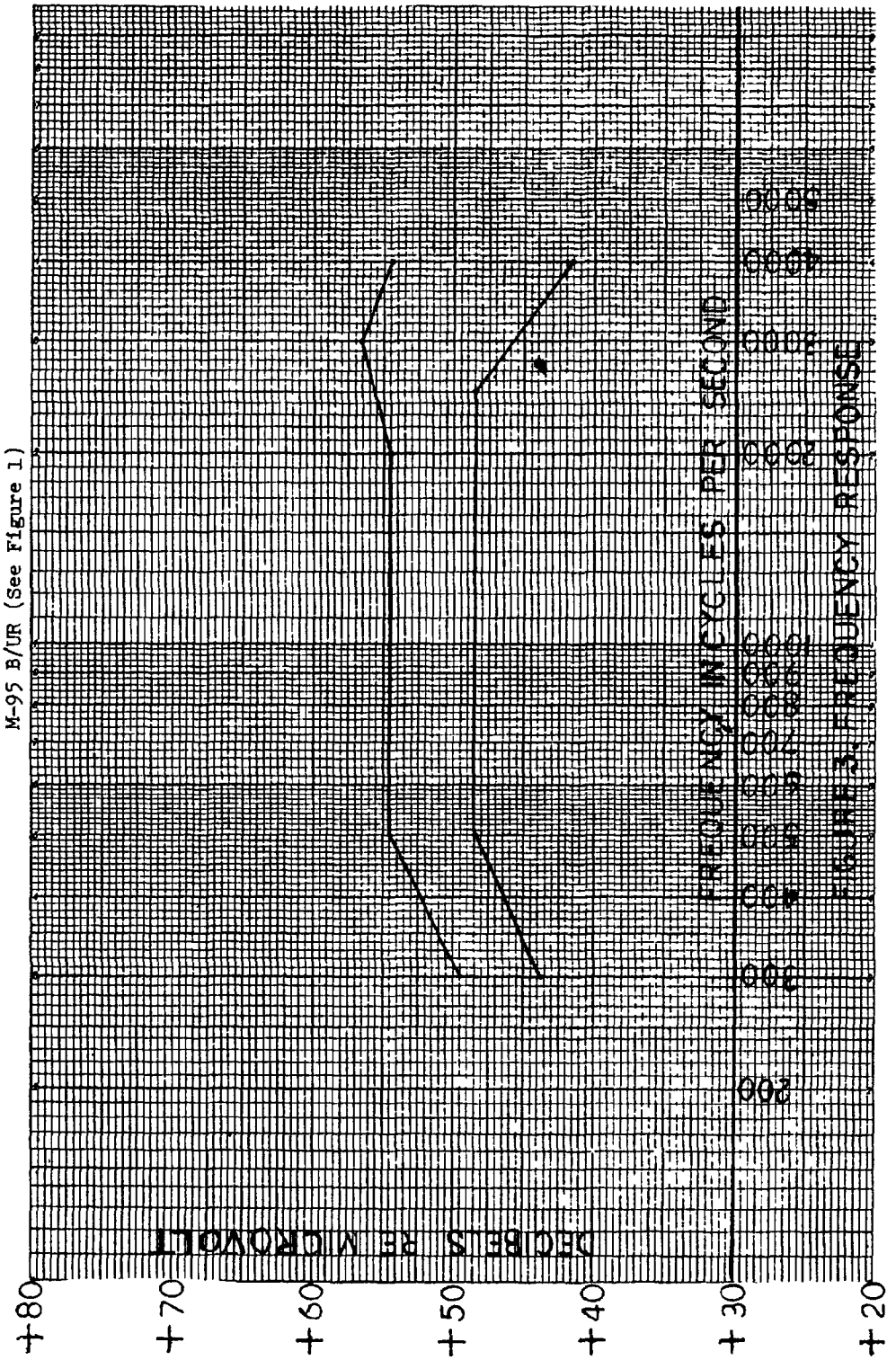


FIGURE 3. FREQUENCY RESPONSE
FREQUENCY IN CYCLES PER SECOND
DECIBELS RE MICROVOLT
M-95 B/UR (See Figure 1)

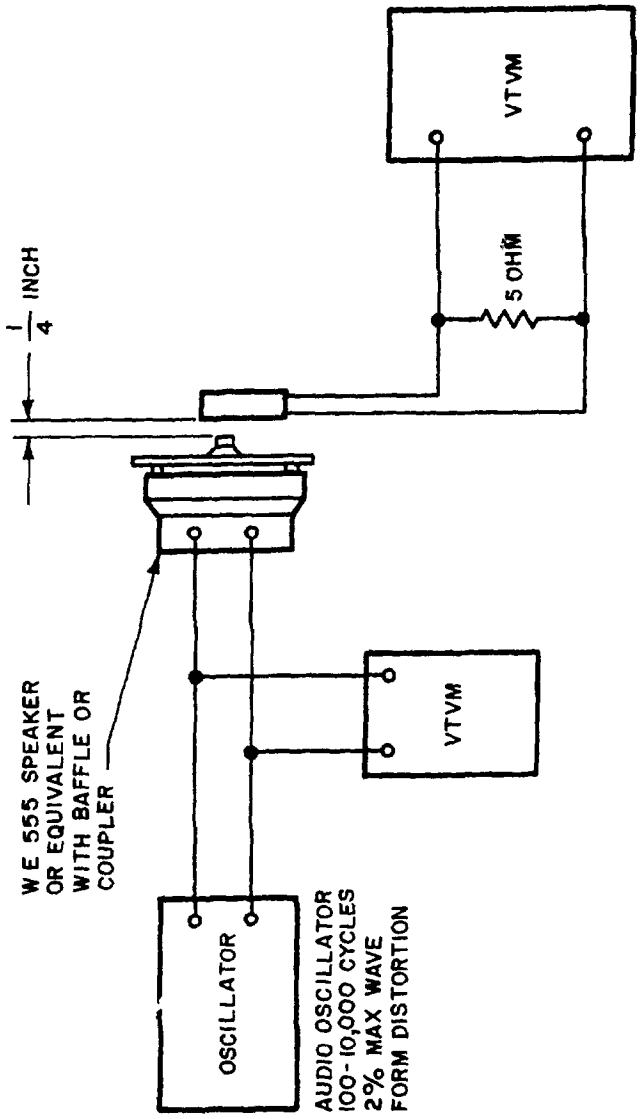
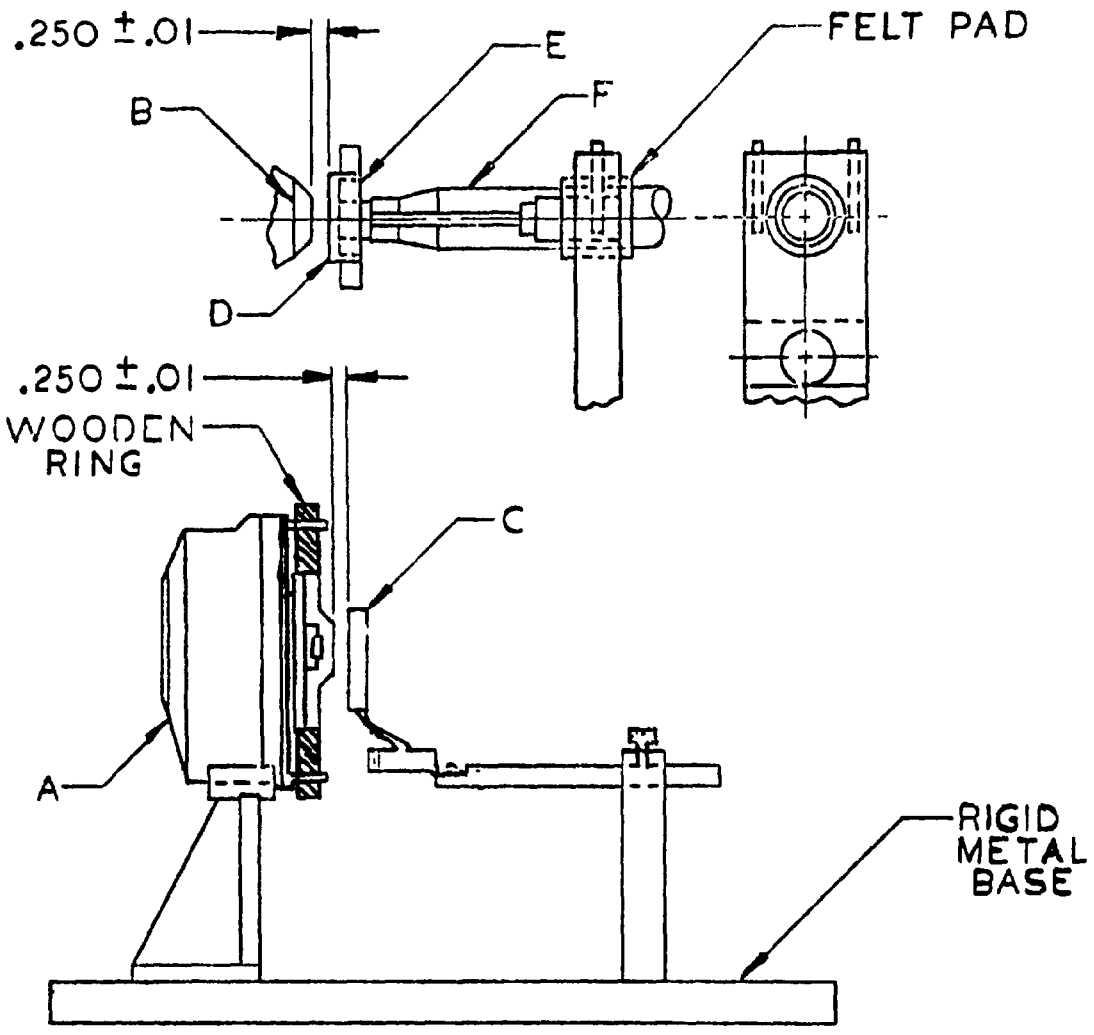


Figure 4. Standard Test Circuit.



A. W.E. 555 SPEAKER DRIVER, OR EQUIV.
B. MICROPHONE CALIBRATING COUPLER (FIG. 6).
C. MICROPHONE UNDER TEST.
D. DUMMY MICROPHONE CASE FOR CALIBRATION.
E. W.E. 640-A CONDENSER MICROPHONE WITH GRID, OR EQUIV.
F. PRE-AMPLIFIER.

FIGURE 5. TEST BASE ASSEMBLY

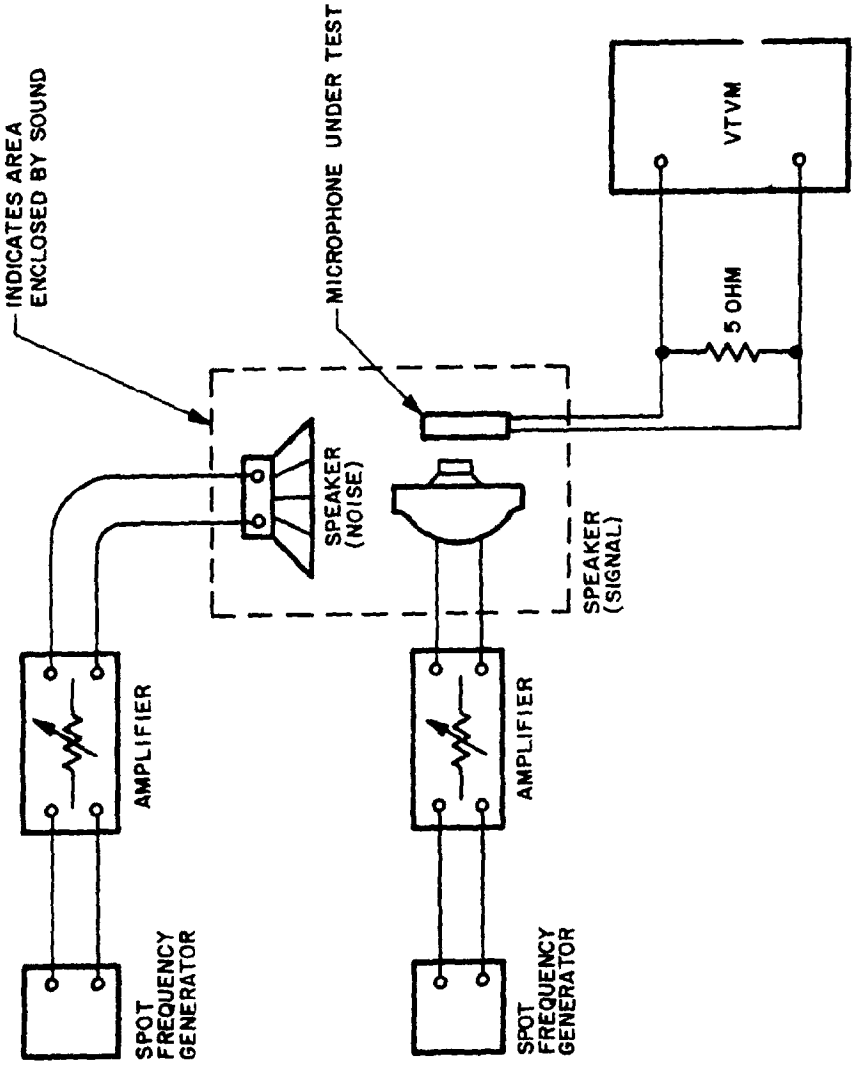


Figure 8. Signal to Noise Ratio Test Circuit.